

REMARKS

Claims 1-13, 18-26 and 53-61 are pending in the present application. Claims 1-4, 6-7, 12 and 18 stand rejected under 35 U.S.C. §102(b) for anticipation by U.S. Patent No. 5,475,317 to Smith. Claims 1-2, 4, 6-7, 12 and 18 stand rejected under 35 U.S.C. §102(b) for anticipation by U.S. Patent No. 4,754,555 to Stillman. Claims 19-20, 23-24 and 26 stand rejected under 35 U.S.C. §103(a) for obviousness over Stillman. Claims 1-13 and 18-26 stand rejected 35 U.S.C. §112, second paragraph for indefiniteness.

Applicant respectfully traverses the rejections and urges allowance of the present application.

Referring to the rejections under 35 U.S.C. §102, the PTO and Federal Circuit provide that §102 anticipation requires that *each and every element* of the claimed invention be disclosed in a single prior art reference. *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). The corollary of this rule is that the absence from a cited §102 reference of *any* claimed element negates the anticipation. *Kloster Speedsteel AB, et al. v. Crucible Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986).

Referring to claim 1, a wafer processing apparatus comprises, in part, a wafer holder adapted to receive a wafer having an electrical coupling and to expose the wafer to a chemical processing environment to chemically process the wafer. Claim 1 is supported by the originally filed specification at least with reference to page 6, line 22 spanning to page 8, line 20 and page 19, line 7 spanning to page 20, line 6. Claim 1 recites patentable subject matter over the prior art of record.

As set forth on page 3 of the Office Action, Smith discloses a *singulated bare die tester*. As set forth in the abstract, Smith discloses a reusable test socket for testing *singulated bare die*. Smith is only related to testing of already fabricated devices including singulated bare dies. Smith fails to teach or suggest claim 1. The Smith reference fails to teach or suggest the claimed *wafer processing apparatus* comprising the wafer holder adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer as positively set forth in claim 1. Claim 1 recites limitations not shown or suggested in the prior art of record. Claim 1 is patentable over the Smith reference for at least this reason.

Referring to the Stillman reference, on page 3 of the Office Action it is stated that Stillman discloses an apparatus for inspecting the coplanarity of *leaded surface mounted electronic components*. In the abstract of Stillman it is set forth that the apparatus includes a socket assembly for receiving an *electronic circuit package and for contacting leads of the package*. Stillman fails to teach or suggest claim 1. Stillman fails to teach or suggest the defined *wafer processing apparatus* of claim 1 including the wafer holder adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer as specifically claimed in claim 1. Claim 1 recites limitations not shown or suggested in the prior art of record. Claim 1 is patentable for at least this reason.

The claims which depend from independent claim 1 are in condition for allowance for the reasons discussed above with respect to the independent

claim as well as for their own respective features which are neither shown nor suggested by the cited art.

Independent claim 18 defines a wafer processing apparatus comprising, in part, a wafer holder adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer. Claim 18 recites patentable subject matter over the prior art of record.

7 | Smith discloses a *singulated bare die tester* and Stillman discloses an apparatus for inspecting the coplanarity of *leaded surface mounted electronic components*. Smith and Stillman fail to teach or suggest the defined *wafer processing apparatus* of claim 18 including the wafer holder adapted to *receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer* as specifically claimed in claim 18. Claim 18 recites limitations not shown or suggested in the prior art of record. Claim 18 is patentable for at least this reason.

Claim 19 recites a wafer processing apparatus comprising, in part, a chuck, an intermediate member adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer, and a wafer. Claim 19 recites patentable subject matter.

Smith discloses a *singulated bare die tester* and Stillman discloses an apparatus for inspecting the coplanarity of *leaded surface mounted electronic components*. Smith and Stillman, even if combined, fail to teach or suggest the defined *wafer processing apparatus* of claim 19 including the wafer holder adapted to *receive a wafer having an electrical coupling and to expose the wafer to a chemical processing environment to chemically process the wafer*

as specifically claimed in claim 19. Further, Smith and Stillman fail to disclose or suggest a wafer. Claim 19 recites limitations not shown or suggested in the prior art of record. Claim 19 is patentable for at least this reason.

Referring to MPEP §2146(j)(3), there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine reference teachings. The mere fact that references *can* be combined or modified does not render the resultant combination obvious *unless the prior art also suggests the desirability of the combination*. MPEP §2143.01 citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Evidence of a suggestion to combine may flow from the prior art references themselves, from the knowledge of one skilled in the art, or from the nature of the problem to be solved. However, this range of sources does not diminish the requirement for actual evidence. Further, the showing *must be clear and particular*. See *In re Dembiczak*, No. 98-1498 (Fed. Cir. 4/28/99). There is no motivation, let alone the clear and particular motivation, to combine the references in support of the obviousness rejection. The obviousness rejection is improper for at least this additional reason.

The claims which depend from independent claim 19 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

Claim 26 recites a wafer processing apparatus comprising, in part, a chuck, an intermediate member adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer, and a calibration wafer. Claim 26 recites patentable subject matter over the prior art of record.

Smith discloses a *singulated bare die tester* and Stillman discloses an apparatus for inspecting the coplanarity of *leaded surface mounted electronic components*. Smith and Stillman, even if combined, fail to teach or suggest the defined *wafer processing apparatus* of claim 26 including the wafer holder adapted to receive a wafer having an electrical coupling and to expose the wafer to a chemical processing environment to chemically process the wafer as specifically claimed in claim 26. Smith and Stillman fail to teach or suggest the claimed calibration wafer. Claim 26 recites limitations not shown or suggested in the prior art of record. Claim 26 is patentable for at least this reason.

Further, there is no motivation to support the combination of references. The rejection of claim 26 is improper for this additional reason.

Referring to the indefiniteness rejections on page 2 of the Office Action, the specification and figures indicate a workpiece holder is disclosed with reference to numeral 12, a contact plate is disclosed with reference to numeral 90, a chuck is disclosed with reference to numeral 40, a calibration workpiece and a production workpiece are disclosed on lines 3-4 of page 7 of the originally filed specification. Exemplary electronic device workpieces 20 illustrated in Figs. 1, 2 and 3 comprise calibration workpieces and/or

production workpieces. Claim 12 has been amended as indicated above. Applicant respectfully requests withdrawal of the indefiniteness rejections.

Claims 5, 8-11, 13, 21-22 and 25 were not rejected over the prior art. Applicant hereby adds new claims 53-61 which include the limitations of such respective claims. New claims 53-61 are in condition for allowance. Applicant made changes to claims 58 and 61 for definiteness.

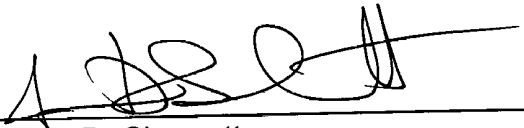
Applicant submits herewith a Supplemental Information Disclosure Statement. Applicant respectfully requests initialization of the references cited thereon.

Applicant respectfully requests allowance of all pending claims.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: 4/30/01

By: 
James D. Shaurette
Reg. No. 39,833



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Inventor David R. Hembree
Assignee Micron Technology, Inc.
Group Art Unit 2858
Examiner V. Nguyen
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Title: Wafer Processing Apparatuses and Electronic Device Workpiece
Processing Apparatuses (As Amended)

VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING
RESPONSE TO JANUARY 31, 2001 OFFICE ACTION

In the Claims

The claims have been amended as follows. Underlines indicate
insertions and ~~strikeouts~~ indicate deletions.

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1. (Amended) ~~An electronic device workpiece processing apparatus comprising:~~

~~a workpiece holder adapted to receive an electronic device workpiece having an electrical coupling, the workpiece holder including an electrical coupling configured to electrically couple with the electrical coupling of the electronic device workpiece and communicate signals between the electronic device workpiece and the workpiece holder~~

A wafer processing apparatus comprising:

a wafer holder adapted to receive a wafer having an electrical coupling and to expose the wafer to a chemical processing environment to chemically process the wafer, the wafer holder including an electrical coupling configured to electrically couple with the electrical coupling of the wafer and communicate signals between the wafer and the wafer holder.

2. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 1 further comprising a data gathering device coupled with the electrical coupling of the ~~workpiece~~ wafer holder and configured to receive the signals.

3. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 2 further comprising a contact plate configured to communicate the signal intermediate the ~~workpiece~~ wafer holder and the data gathering device.

4. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 1 wherein the ~~workpiece~~ wafer holder includes a first surface, a second surface, and an electrical interconnect configured to electrically couple the first surface and the second surface.

5. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 4 wherein the first surface of the ~~workpiece~~ wafer holder is configured to face a received ~~electronic device workpiece~~ wafer and the second surface is configured to face a chuck.

6. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 1 wherein the ~~workpiece~~ wafer holder includes a plurality of electrical couplings adapted to couple with a plurality of electrical couplings of the ~~electronic device workpiece~~ wafer.

7. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 1 wherein the ~~workpiece~~ wafer holder comprises a chuck.

8. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 1 wherein the ~~workpiece~~ wafer holder comprises a chuck configured to receive a calibration ~~workpiece~~ wafer and a production ~~workpiece~~ wafer.

9. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 8 wherein the ~~workpiece~~ wafer holder and the calibration ~~workpiece~~ wafer include vacuum chambers adapted to receive a vacuum to couple the calibration ~~workpiece~~ wafer and the production ~~workpiece~~ wafer with the chuck.

10. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 1 wherein the ~~workpiece~~ wafer holder comprises an intermediate member adapted to couple with a chuck.

11. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 1 wherein the ~~workpiece~~ wafer holder includes a vacuum chamber adapted to receive a vacuum to couple a received ~~electronic device workpiece~~ wafer with the ~~workpiece~~ wafer holder.

12. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 1 wherein the electrical interconnect comprises a conductive column configured to extend outward from plural surfaces of the ~~chuck~~ wafer holder.

13. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 12 further comprising a contact plate including circuitry configured to provide electrical connection with the conductive column.

18. (Amended) ~~An electronic device workpiece processing apparatus comprising a workpiece holder adapted to receive an electronic device workpiece and the workpiece holder having circuitry configured to communicate a process signal received from a received electronic device workpiece and the process signal containing information regarding processing of the received electronic device workpiece~~

A wafer processing apparatus comprising:

a wafer holder adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer, the wafer holder having circuitry configured to communicate a process signal received from a received wafer and the process signal containing information regarding processing of the received wafer.

19. (Amended) ~~An electronic device workpiece~~ A wafer processing apparatus comprising:

a chuck including a surface, an electrical coupling adjacent the surface, and electrical interconnect configured to connect with the electrical coupling of the chuck and conduct a signal within the chuck;

an intermediate member adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer,
the intermediate member having a first surface and a second surface and the intermediate member including:

an electrical coupling adjacent the first surface and configured to couple with the electrical coupling of the chuck;

an electrical coupling adjacent the second surface; and

an electrical interconnect configured to connect the electrical coupling adjacent the first surface and the electrical coupling adjacent the second surface; and

~~an electronic device workpiece~~ a wafer configured to couple with the second surface of the intermediate member, the ~~electronic device workpiece~~ wafer including a sensor and an electrical coupling configured to provide electrical connection of the sensor with the electrical coupling of the second surface of the intermediate member.

20. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 19 further comprising a data gathering device coupled with the electrical coupling of the chuck and configured to receive the signal.

21. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 20 further comprising a contact plate configured to communicate the signal intermediate the chuck and the data gathering device.

22. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 19 wherein the sensor comprises a resistance temperature device.

23. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 19 wherein the ~~electronic device workpiece~~ wafer comprises a calibration ~~workpiece~~ wafer.

24. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 19 wherein the electrical interconnect comprises a conductive column configured to extend outward from plural surfaces of the chuck.

25. (Amended) The ~~electronic device workpiece~~ wafer processing apparatus according to claim 24 further comprising a contact plate including circuitry configured to provide electrical connection with electrical couplings of the chuck.

26. (Amended) ~~An electronic device workpiece~~ A wafer processing apparatus comprising:

a chuck including a surface, a plurality of electrical couplings adjacent the surface, and a plurality of electrical interconnects configured to connect with respective electrical couplings of the chuck and conduct signals within the chuck;

an intermediate member adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer,
the intermediate member having a first surface and a second surface and the intermediate member including:

a plurality of electrical couplings adjacent the first surface and configured to couple with respective electrical couplings of the chuck;

a plurality of electrical couplings adjacent the second surface; and

a plurality of electrical interconnects configured to electrically connect the electrical couplings of the first surface with respective electrical couplings of the second surface;

a calibration ~~workpiece~~ wafer configured to couple with the second surface of the intermediate member, the calibration ~~workpiece~~ wafer including a plurality of resistance temperature devices configured to generate process signals, and a plurality of electrical connections configured to electrically connect the resistance temperature devices with respective electrical couplings of the second surface of the intermediate member; and

a data gathering device coupled with the electrical interconnects of the chuck and configured to receive the process signals from the resistance temperature devices through the intermediate member and the chuck.